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EXAMINER

SONG, MATTHEW J

ART UNIT

PAPER NUMBER

1765

DATE MAILED: 05/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/853,467

Applicant(s)

BRAY, TERRY LEE

Examiner

Matthew J Song

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/26/2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 14-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 14-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites, "the device configured for placement between the crystal growth solution and the reservoir solution" in lines 4-5. There is no explicit teaching in the instant specification for this instantly claimed feature.

3. Claim 19 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 19 recites, "a device configured for engaging the container" in line 4. There is no explicit teach in the instant specification for this instantly claimed feature.

Claim Rejections - 35 USC § 102

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5, 14-23 and 27-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Heilig et al (US 5,266,284).

Heilig et al discloses a means of which the direction and amount of diffusion can be controlled by the degree of overlap of a gap and reservoirs, where three housing parts **106**, **102**, **112** with **112** being rotatably disposed with respect to a center part **102**. Heilig et al also discloses a protein solution **107** is situated in a glass cylinder **105** (col 4, ln 30-68). Heilig et al also discloses two recesses **96**, this reads on applicant's discrete channel, are situated in a wall of the center part which borders on a rotating part **112**, this reads on applicant's selection unit, two reservoirs **130**, **132** are disposed in indentations inside the rotating part **112** and a component **122**, this reads on applicant's cover (Fig 14a). Heilig et al also discloses a sealing washer **92** is arranged between the rotating and the center part and the washer has recesses **93** which corresponds to those of **96** in the wall of the center part. Heilig et al also discloses for the crystallization phase, the rotating part is rotated so far the one of the reservoirs comes to be situated completely or partially over the recesses **96** and as a result diffusion can take place from or to a drop of protein solution **107** (col 5, ln 1-55 and Figs 14-17). Heilig et al also discloses a "hanging drop" method of crystal growth (col 1, ln 15-25).

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Referring to claim 1, Heilig et al discloses the amount of diffusion is controlled using the three housing parts **106**, **102** and **112**. The housing parts are placed between the solution **107** and reservoirs **130**, **132**.

Referring to claim 2, Heilig et al discloses recesses **96**, this reads on applicant's discrete channels. (col 5, ln 1-15)

Referring to claim 3, Heilig et al discloses two recesses **96** and two reservoir solutions **130**, **132**. (col 5, ln 1-15)

Referring to claim 4, Heilig et al discloses the extent of diffusion can be controlled by the degree of overlap and the rotating part is rotated so far the one of the reservoirs comes to be situated completely or partially over the recesses, this reads on applicant's actively controlled channel unit.

Referring to claim 5, Heilig et al discloses two recesses **96** in the center part **102**. The recesses are inherently filled with air, this reads on applicant's material porous to vapor

Referring to claim 14, Heilig et al discloses reservoirs **130** and **132**, a recess **96**, this reads on applicant's channel unit, and a rotating part **112**, this reads on applicant's selection unit with a opening (Figs 14-17) and the rotating part is rotated so far the one of the reservoirs comes to be situated completely or partially over the recesses **96** to control the amount of diffusion (col 4, ln 55 to col 5, ln 45). Heilig et al is silent to the opening is large enough not to control the rate of vapor diffusion. It is inherent to the invention by Heilig et al to have an opening large enough not to control the rate of vapor diffusion because opening is as large as the reservoir opening (Fig 14b), therefore can not control the rate of vapor diffusion. Also, Heilig et al discloses the rotating part **112** is rotatable. Heilig et al is silent to the channel unit can rotate. However, Heilig et al

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discloses the channel unit is a separate housing part, which is inherently capable of being rotated. Heilig et al is not required to have the channel unit rotate, merely the capability of being rotated.

Referring to claim 15, Heilig et al discloses a cover, **122** (Fig 14a).

Referring to claim 16, Heilig et al is silent to the channel unit comprises an opening large enough not to control the rate of vapor diffusion. It is inherent to the invention taught by Heilig et al to have an opening large enough not to control the rate of vapor diffusion because the opening is as large as the reservoir opening, therefore can not control the rate of vapor diffusion (Fig 14b).

Referring to claim 17, Heilig et al discloses a sealing washer **92**.

Referring to claim 18, Heilig et al discloses the extent of diffusion can be controlled by the degree of overlap and the rotating part is rotated so far the one of the reservoirs comes to be situated completely or partially over the recesses, this reads on applicant's actively controlled channel unit.

Referring to claim 19, Heilig et al discloses a solution is situated in a glass cylinder **105**, this reads on applicant's container. A center part with two recesses **96** situated in the wall of the center part **102**, this reads on applicant's device having discrete diffusion pathways and sealing with O-rings **104**, **120** and a sealing washer **92**, this reads on applicant's seal. Heilig et al also discloses a lid **122** (Fig 14a), which also reads on applicant's seal.

Referring to claim 20, Heilig et al discloses recesses **96**, this reads on applicant's discrete channels. (col 5, ln 1-15)

Referring to claim 21, Heilig et al discloses two recesses **96** and two reservoir solutions **130**, **132**. (col 5, ln 1-15)

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Referring to claim 22, Heilig et al discloses the extent of diffusion can be controlled by the degree of overlap and the rotating part is rotated so far the one of the reservoirs comes to be situated completely or partially over the recesses, this reads on applicant's actively controlled channel unit.

Referring to claim 23, Heilig et al discloses two recesses **96** in the center part **102**. The recesses are inherently filled with air, a material porous to vapor.

Referring to claim 28-29, Heilig et al discloses the channel unit is a separate housing part from the first housing part **106**, which is inherently capable of being removable.

Referring to claim 30-31, Heilig et al discloses sealing with O-rings **104**, **120** and a sealing washer **92** (col 5, ln 1-5).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 24-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Heilig et al (US 5,266,284) as applied to claims 1-5, 14-23 and 27-31 above, and further in view of Kim et al (US 6,039,804).

Heilig et al discloses all of the limitations of claim 24, as discussed previously, except the seal is optically clear.

In a method of hanging drop crystallization of a protein, note entire reference, Kim et al teaches a drop of solution containing the substance to be crystallized to a cover slip **46**, which is inserted into a drop chamber. Kim et al also teaches after the solution is placed in the drop chamber the drop chamber can be sealed by applying a sealant, preferably transparent, adhesive tape (col 4, ln 45-67), this reads on applicant's optically clear. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Heilig et al with Kim et al's transparent means of sealing a chamber to observe the crystallization process.

Response to Arguments

8. Applicant's arguments filed 2/26/2003 have been fully considered but they are not persuasive.

Applicant's argument that the Heilig et al reference does not disclose the channel unit and selection unit are rotatable (pg 4) has been considered but has not been found persuasive. Heilig et al discloses the rotating part **112** is rotatable, but Heilig et al does not explicitly teach rotating the center part **102**. However, Heilig et al discloses the channel unit is a separate housing part, which is inherently capable of being rotated as the rotating part **112** rotates. As claimed, Heilig et al is not required to have the channel unit rotate, merely the capability of being rotated.

Applicant's argument the recesses **96** cannot read on the channel unit and selection unit has been considered but has not been found persuasive. Heilig et al discloses a center part **102**

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with recess **96**, this read on the channel unit. Heilig et al also discloses a rotating part **112** with openings (Figs 14-17), this reads on applicant's selection unit. The selection unit and channel unit are discloses by Heilig et al to be two separate parts.

9. Applicant's arguments with respect to claims 1-5 and 19-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J Song whose telephone number is 703-305-4953. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin L Utech can be reached on 703-308-3868. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Matthew J Song
Examiner
Art Unit 1765

MJS
May 15, 2003


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SUPERVISORY PATENT EXAMINER
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